

from Tom Cohn DTSC  
DSTC oration funded sites

### Status of DTSC's Sites, Northern Orange County Basin

There are regional plumes of volatile organic compounds (VOCs) in groundwater in Fullerton and Anaheim. Due to this imminent threat to potable water supplies in that area, DSTC, under the State funds to conduct a remedial investigations and implement removal of VOCs at three sites; the Former Chicago Musical Instruments Company (Chicago Musical) site, located at 350 South Raymond Avenue, Fullerton, the Orange County Metal Processing (Orange County Metal) site, located at 1711 East Kimberly Avenue, Fullerton, and the PCA Metal Finishing (PCA) site, located at 1726 East Rosslynn Avenue, Fullerton.

The Chicago Musical site is about 7.51 acres and operated from 1964 through 1979. During this time, VOCs such as trichloroethylene (TCE), 1,1-dichloroethylene (1,1-DCE), and tetrachloroethylene (PCE) leaked from degreasing sumps into soil and groundwater. Due to the elevated levels of VOCs in the subsurface, and the potential indoor air risk for the occupants at the Site, DTSC installed and operated a soil vapor extraction (SVE) pilot system to help mitigate the indoor air problem and keep vapors from migrating off-site. Contaminants at the Site also contributed to the regional groundwater plume in Fullerton. So far, approximately 16,206 pounds of VOCs were removed using the SVE System. Currently, we are working on finalizing the Feasibility Study/Remedial Action Plan (FS/RAP) for the Soil and Groundwater at the site.

Orange County Metal is a metal finishing shop which coats metal parts used by automobile and computer manufacturers. The area of concern is approximately 14,000 square feet. Due to elevated levels of VOCs in the subsurface and the potential indoor air risk for the occupants of the Site, DTSC installed and operated a soil vapor extraction (SVE) pilot system to help mitigate the indoor air problem and keep vapors from migrating off-site. Since the start of SVE pilot study on May 17, 2012 through March 4, 2014, the system operated approximately 13,213 hours and an estimated 1,924 pounds of VOCs were removed from the Site property.

The PCA site is adjacent to the Orange County Metal site, and owned by the same owners. There is evidence of VOCs, such as TCE, and PCE on the PCA property that appeared to have migrated to the adjacent Orange County Metal property. Due to elevated levels of VOCs in the subsurface, DTSC installed soil vapor extraction wells and connected them to the adjacent Orange County Metal SVE system to remediate the subsurface soil contamination. From July 31, 2013 through March 4, 2014, the system operated approximately 4,915 hours and an estimated 128 pounds of VOCs were removed from the PCA Metal Finishing property. Currently, we are completing the remedial investigation and assessing the distribution of VOCs in soil gas, soil, and groundwater at both OCMP and PCA.

- State has not dealt w/ the SVE

- \$2 - \$5 Million Hazardous waste A - all sites and some going to recycling over UNOV \$1.5 - 2M

- RAP identified  
- very lush cone  
- SC and carbon  
- was like pure product PCE  
- indoor air risk was off the chart  
- screaming high indoor air  
- some owner has PCA site w/ diff. operations  
- 1000 old buildings are around  
- high air con

## BRIEFING PAPER

### Regulatory Status and Involvement in the Orange County Groundwater Protection Project – South Basin

#### Executive Summary

The Orange County Water District (OCWD) has identified two groundwater areas (South and North Basins) within its jurisdiction that are impacted primarily by volatile organic compounds. Two impacted areas are about 7 miles apart (see Figure 1).

- Product well impacted: 1 well (IRWD-3) – see Figure 1 for location.
- Sources of releases: 55 sources of releases identified by OCWD. See Tables 1 for the status of these sources of releases. See Figures 2 for the location of the sources.
- DTSC's sites: 9 sites listed in the DTSC's EnviroStor. (5 actively managed)
- OCWD's activities: groundwater grab sampling conducted. No remediation in this basin.

#### OCWD's Recommendations

- OCWD plans to remediate the regional contaminated plumes and recommends that the State regulatory agencies and potentially USEPA address the site specific source area by controlling and/or removing the source from specific sites.

#### Status of DTSC's Actively Managed Sites

- Embee Plating: this is a metal plating facility with a Corrective Action Consent Agreement issued in 2012. Onsite soil, soil vapor and groundwater investigations. Contaminates detected include metals (such as hexavalent chromium, chromium, cadmium, copper, nickel, etc.), volatile organic compounds and perchlorate. Limited enhanced bio-remediation as interim measures is being implemented to control the off-site migration. Indoor air samples were also sampled and indicated that there is no immediate human health concerns. Embee is evaluating the need to expand the interim measures. Groundwater monitoring continues at the site.
- Holchem: This was a chemical distributor and waste recycling and transfer facility. A dual phase extraction system was implemented but discontinued at this time. Groundwater monitoring is being implemented at the site. DTSC issued an Order on April 2, 2014 to continue the cleanup activities under Chapter 6.8.

- Engineering Plating: The facility operations ceased in 2003. An ISE Order was issued in August 2013 to the former owner but no response was received from the owner. DTSC is currently conducting a potential responsible parties search.
- Cherry/Textron: This is a fastening system manufacturer that operates a wastewater treatment system under PBR. A CACA was issued in 2009. Onsite soil, soil gas and groundwater investigation were conducted. VOC was the major contamination identified in the facility. Groundwater monitoring continues at the site. The facility conducted a dual phase extraction pilot study and is in process of proposing a remediation to control the migration of contaminated plume toward off-site. Cherry is also revising its indoor air sampling workplan for DTSC's approval. Cherry expects to propose interim measures under Chapter 6.8 by June 2014.

John Scandura handles for which groups are doing which site

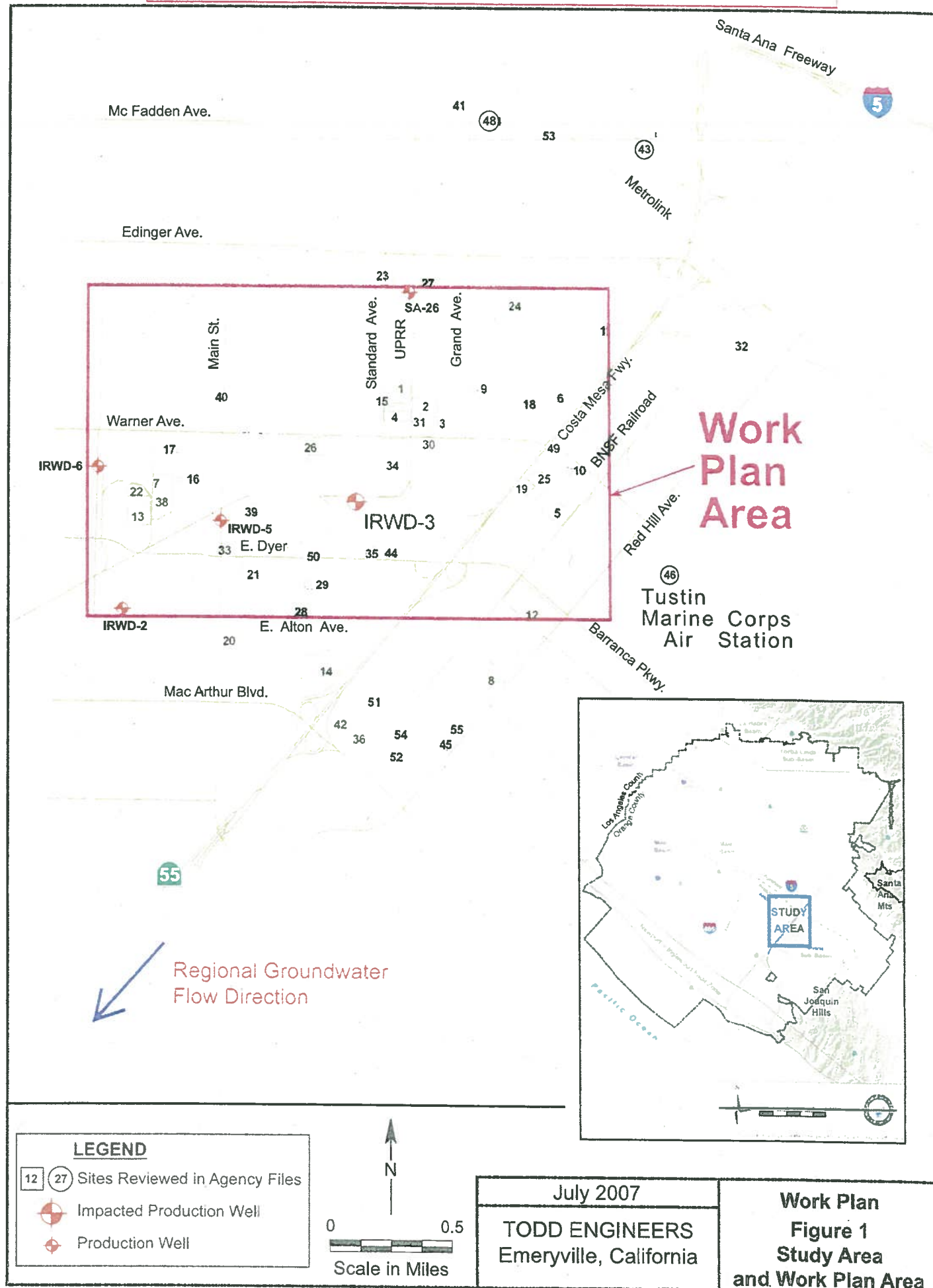
Ann - in charge of Board 1, site cleanup plans

## Orange County North Basin Groundwater Area - PRP Sites and Facilities

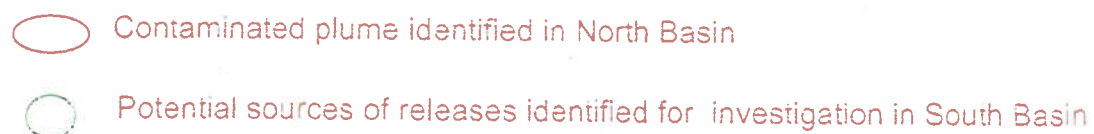
SITE	DTSC LEAD	WATER BOARD LEAD	STATUS	
AC Products		X	Soil Closed. Treatment in progress. Plume is receding. Ceased pumping at one extraction well.	Bd voluntary cleanup except Northrop - under order ✓ Geotitles has up to date info. only few sites don SW, and former down val. old site
Aerojet		X	All previously installed groundwater monitoring wells were abandoned to make way for redevelopment of the property. The wells were dry. VOC contaminated soil at the northern portion of the property was excavated and transported offsite for disposal.	
Alcoa		X	Ongoing vapor extraction system. System was recently evaluated to determine ways to optimize the extraction system. Deep soil gas samples were collected. Report is currently in review. Groundwater monitored semiannually.	
American Electronics		X*	Petroleum UST cases - closed	
Arnold Engineering			- does intend to include marginal sites to PH/V or P/I/SI, and/or site screens	
CBS Fender			→	
CBS/MAG Aerospace				
Chicago Musical Instruments	X		State Orphan Site - SVE pilot study implemented. Remedial action plan in progress	
Crucible Metals/Trent Tube Div.	X*		- Dave says said cleanup found high levels of 1,4 dioxane	
Fullerton Manufacturing/ Raytheon	X*		- some sites closed cur - can revert closed out sites	
Kester Solder (Northrop)		X	- Dave says said cleanup found high levels of 1,4 dioxane	
Khyber Foods, Inc.	X*		Soil Closed (12/10). Tracer study test conducted. GW remediation technology not finalized yet.	

Mark IV/EDO		X*	Gulton 2424 E Fender Ave/EDO 300 S. State College/ Mark IV Industries - closed November 8, 2002
Microdot/ Fairchild		X*	190 W Crowther Ave? Closed 9/25/1996
Monitor Plating		X	Property owner issued Oversight Cost Recovery letter (March 2012). No response yet. Low VOC Concentrations in groundwater.
Moore/Wallace			
Northrop ESO/EMD			Listed as closed site in GeoTracker.
Northrop Y-12		X	SVE operation cleaned shallow and intermediate soil. Still operating on the deep soil. GW is being treated by in-well UV/H2O2 system.
Northrop Y-19			
O.C. Metal Processing	X		State Orphan Site - SVE implemented
PCA Metals	X		State Orphan Site - SVE pilot study implemented, GW investigation in progress
Raytheon			
Weyerhaeuser			Two closed cases: 1300 E. Valencia & 601 E. Ball Rd.

\* Inactive or Closed Site







**TABLE 1 - ORANGE COUNTY GROUNDWATER PROTECTION PROJECT -SOUTH BASIN**

	Site Name	Approximate Distance And	Agency Status	Current Activity	GW Remediation
1	Gallade Chemical (aka Avalon Chem Co., aka Orange County Chemical Co.)	2,700 - NNE	Active (RWQCB/DTSC-post closure)	Assessment and remediation	Groundwater pump and treat; dual phase extraction (combination groundwater extraction, soil vapor extraction)
2	Embee Plating	2,600 - NNE	Active (DTSC - C.Yen)	Assessment and pilot study remediation	RCRA CA - enhanced bio
3	Holchem / Service Chem Co. (aka Brenntag West, aka SOCO)	2,400 - NE	Active (USEPA/DTSC - R. Romero))	Assessment and limited remediation and pilot testing	Soil Thermal oxidizer system installed, SVE conducted, and high vacuum extraction test conducted
4	Diceon Electronics (aka Kosakvra Assoc.; aka CA Environmental Engineering; aka George Gemayel)	2,100 - NNE	Active (RWQCB)	Monitoring	None implemented as of 2006
5	GE Plastics (aka LNP Plastics)	4,400 - E	Active (RWQCB)	Assessment and remediation	Interim pump and treat. Insitu biodegradation being pilot tested in 2005
6	Universal Circuits (aka Remedial Counsel Comm.)	5,100 - NE	Active (RWQCB)	Post remediation monitoring	Excavation and dual phase groundwater and vapor extraction system in operation (2007).
7 35	Colonial Engineering and Mobil Chemical (BASF)	4,200 - W	Active (RWQCB)	Post remediation monitoring	Excavation, Insitu oxidation proposed, Implementation
8	ASTECH (aka Aloca Composites)	4,800 - SE	Active (RWQCB)	Post remediation monitoring	Excavation and pump and treat



	Site Name	Approximate Distance And	Agency Status	Current Activity	GW Remediation
9	Circuit One (aka L. H. Research; aka Martin Companies)	3,500 - NE	Active (RWQCB)	Monitoring and remediation	Dual phase groundwater and vapor extraction
10	Troy Computer (aka Revere Financial)	4,700 - E	Active (Agency?)	Monitoring and remediation	Dual phase groundwater and vapor extraction
11	Bell Industries	6,600 - NE	Active (RWQCB)	Monitoring and remediation	Groundwater pump and treat
12	BFM Energy Prod (aka DRSS-1; aka BFM Aerospace, aka Integrated Aerospace Systems; aka Smiths Aerospace)	4,300 - SE	Active (RWQCB)	Monitoring and remediation	Pump and treat and enhanced bioremediation
13	Kugel Trust Prop (aka Interconnection Prod, aka McDonald Packaging)	4,700 - W	Closed (RWQCB)	Closed	Excavation, groundwater and vapor recovery
14	Emerson Electric (aka Emerson Computer Power)	3,700 - S	Closed (RWQCB)	Closed	Dual phase groundwater and vapor extraction; subsurface bentonite containment wall and groundwater extraction; dual phase extraction with air sparging and hydrogen peroxide
15	Extruded Plastics (aka Griffin Electronics; aka Style Craft)	2,200 - NNE	No files (EPA)	None	Excavation near a wastewater sewer line break
16	Orange Coast Plating (Nipon Engine Spec)	3,800 - W	Closed (DTSC)	None	Excavation
17	Commercial Chem (aka Tibbetts Newport Company; aka Gerald F. Mattingly Trustee)	4,000 - WNW	Closed (local agency)	Closed	USTs removed
18	West Coast Coatings (aka Berkeley Invest., aka Silver Wood Landscaping)	4,400 - NE	Active (local agency)	Remediation	UST removed and excavation; additional insitu remediation of Cr-VI proposed in 2005
19/2	Tolo Inc. (aka	4,000 - E	Closed	Inactive	UST removed

	Site Name	Approximate Distance And	Agency Status	Current Activity	GW Remediation
5	Pullman/Carnegie Industrial Center, aka Pullman Partners) and PDA Engineering				
20	Micromotors Inc. (Pro Dex)	4,100 - SW	Closed (RWQCB)	Inactive	Excavation and backfilling
21/33	Griswold Controls (aka Walco Manufacturing) and City Center Industrial Park	3,000 - WSW	Active (RWQCB)	Monitoring and remediation	Excavation and SVE, currently (2006) in-situ bioremediation
22	Industrial Building (aka SETCO, Inc.)	4,700 - W	Closed (OCHCA)	Inactive	Excavation
23	Engineering Plating (aka A-1 QUARTZ CO (aka Circuit Express, aka Europa Wheels)	4,900 - NNE	Active (DTSC-H. Hashemian)	Investigation	
24	Ingram Micro	5,500 - NE	Closed	Closed	none implemented as of 2006
26	Santa Ana City Yard	1,600 - NW	Inactive (RWQCB)	Inactive	UST removal and excavation
27	Rheem Metals	5,000 - NNE	Inactive (DTSC)	Inactive	???
28	Aluminum Forge (Div. of Altamil Corp.)	2,700 - SSW	Closed	Inactive	???
29	Dyer Business Park (aka former Accurate Circuit)	2,100 - S	Active (RWQCB)	Monitoring and remediation	UST removal, excavation, and pilot testing of dual phase extraction
30	AF Milliron Co / Diesel Logistics (aka Beard Printin	2,200 - NE	Inactive (DTSC-R. Ahmed)	Investigation (PEA)	???
31	Griffin Electronics	2,300 - NE	Inactive	Inactive	Excavation
32	McKesson Chemical (aka Foremost & McKesson; aka Marconi Racing)	9,100 - NE	Inactive	Inactive	
34	Textron Fastening Systems - Aerospace (aka Cherry Textron)	1,100 - NE	Active (DTSC - C. Yen)	GW monitoring, Remedial action underway	RCRA CA - DPE Extraction pilot study

	Site Name	Approximate Distance And	Agency Status	Current Activity	GW Remediation
35	ITT Cannon	1,200 SE	Active (RWQCB)	Remedial action underway	UST removed, dual phase extraction and treatment, insitu reductive dechlorination
36	Drake Engineering	5,000 - SSE	Active (RWQCB)	Inactive	UST removal and soil excavation
37	PC World	7,600 - SE	Closed (RWQCB)	Inactive	Excavations
39	Arco Welding Manufacturing	2,300 WSW	Closed (RWQCB)	Inactive	None
40	Transmission Master	3,700 - NW	Closed (RWQCB)	Inactive	UST removed
41	Normandy Partners	8,900 - NNE	Closed (RWQCB)	Inactive	???
42	Ricoh Electronics	4,900 - S	Active (RWQCB)	Remediation and monitoring	Excavation and pump and treat
43	Xerox Corporation Facility	10,200 - NE	Closed (DTSC - P. Acharya)	Inactive	Removal of tanks and piping, excavation and SVE
44	US Polymetric	1,300 - SE	Closed (DTSC - P. Acharya)	Inactive	USTs removed and soil excavation
45	Rockford Aerospace Products	5,600 - SE	Inactive	Inactive	???
46	Tustin Marine Corps Air Station	11,000 - ESE	Active (DTSC - A. Peddada)	Remediation and monitoring	various
47	Newport Corporation	6,500 - SE	Closed	Inactive	Soil excavation
48	Break-Free Inc	8,700 - NNE	Closed (DTSC)	Inactive	Excavation
49	Steel Case Inc.	4,500 - ENE	Active	Post remedial action monitoring	Dual phase extraction and treatment
50	USCO Distribution Service, Inc	1,500 - SSW	Closed (RWQCB)	Inactive	UST removal, soil excavation, and pump and
51	TDK Engineering	4,400 - SSE	Closed	Inactive	UST removal and soil excavation
52	Unisys/Memorex	5,600 - SSE	Active (RWQCB)	Post remedial action monitoring	Pump and treat and monitoring of natural attenuation
53	Classique cleaners	9,000 - NE	Closed	Inactive	None
54	Mitchel Rubber Co.	5,100 - SSE	Closed	Inactive	None
55	Edwards Lifesciences	5,400 - SE	? (RWQCB)	Inactive	UST removal and excavation

